

<b>PRE-APPEAL BRIEF REQUEST FOR REVIEW</b>		Docket Number (Optional)  20555/1203433-US1	
		Application Number 09/731,899-Conf. #1183	Filed December 8, 2000
		First Named Inventor Benjamin Chain et al.	
		Art Unit  1645	Examiner  R. P. Swartz
<p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a notice of appeal.</p> <p>The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.</p> <p>I am the</p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 60%;"> <p><input type="checkbox"/> applicant /inventor.</p> <p><input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)</p> <p><input checked="" type="checkbox"/> attorney or agent of record. Registration number <u>46,550</u></p> <p><input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34. _____</p> </div> <div style="width: 35%; text-align: center;"> <p>_____ /Mitchell Bernstein/ Signature</p> <p>_____ Mitchell Bernstein Typed or printed name</p> <p>_____ (212) 527-7700 Telephone number</p> <p>_____ October 29, 2008 Date</p> </div> </div> <p>NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.</p>			
<input type="checkbox"/> *Total of <u>1</u> forms are submitted.			

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:  
Benjamin Chain et al.

Application No.: 09/731,899

Confirmation No.: 1183

Filed: December 8, 2000

Art Unit: 1645

For: **CHIMERIC PEPTIDES AS IMMUNOGENS,  
ANTIBODIES THERETO, AND METHODS  
FOR IMMUNIZATION USING CHIMERIC  
PEPTIDES OR ANTIBODIES**

Examiner: R. P. Swartz

**SUBMISSION TO ACCOMPANY**  
**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

MS AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

**I. INTRODUCTION**

The present Submission sets forth the basis for Applicant's concurrently submitted pre-appeal brief request for review. Claims 1-5, 10 and 21-25 stand rejected under section 102(e) as anticipated by Perl, U.S. Patent No. 5,879,909 ("Perl"). The rejection should be withdrawn because Perl fails to disclose the chimeric peptide of any of claims 1-5, 10 and 21-25. Review is requested because the Examiner has committed the following clear errors.

**II. THE EXAMINER HAS FAILED TO PROPERLY CONSTRUE THE  
CLAIMS BECAUSE HE HAS ARBITRARILY AND IMPROPERLY  
CONSIDERED A LIMITATION TO BE A PRODUCT-BY-PROCESS  
LIMITATION AND HAS THUS FAILED TO GIVE WEIGHT TO THE  
LIMITATION**

The claims are directed at their broadest aspect to a chimeric peptide (or mixture of peptides) of formula (I) or formula (II) comprising a 2-5 amino acid peptide ("N" or "C" in formulas (I) and (II)), a T helper cell epitope and an optional spacer between the peptide and the T helper

cell epitope. *See* claim 1 Claims 1 and 5-12 are drawn to chimeric peptides without reference to the source of the peptides N and C. Claims 2-5 and 21-32 are drawn to chimeric peptides wherein N and C correspond to peptide sequences found in amyloid  $\beta$  protein.

In all of the claims, peptide N consists of amino acid residues from the free N-terminus of a naturally-occurring internal peptide cleavage product that is formed by proteolytic cleavage of a precursor protein or a mature protein and peptide C consists of amino acid residues from the free C-terminus of a naturally-occurring internal peptide cleavage product that is formed by proteolytic cleavage of a precursor protein or a mature protein. The Examiner, however, has improperly failed to accord any weight to the limitation that peptides N and C are formed by amino acids found respectively at the N-terminus or C-terminus of an internal peptide cleavage product that is formed by proteolytic cleavage of a precursor protein or a mature protein. The Examiner states that the recitation of this limitation is “merely a product by process, and does not place any patentable structure characteristic on the final product, i.e., the claimed chimeric peptide, which would differentiate the claimed peptides from peptides made by another process, such as the peptides produced by Perl.” *See* Final Office Action dated April 29, 2008 at paragraph bridging pages 2 and 3. The Examiner has thus failed to construe the claims properly.

The Examiner’s failure to give weight to the above-identified limitations should be reversed because it has no factual or legal basis. First, the Examiner is incorrect to characterize the limitation as “merely a product by process.” The term “product-by-process” is properly used with reference a claim, not a claim limitation. Moreover, the concept of “product-by-process refers” to defining a product by how it is made. The present claims are traditional product claims; they define the claimed chimeric peptides by sole reference to the claimed products, without reference to how they are made. Thus, the limitation that N and C are amino acids found respectively at the N-terminus or C-terminus of an internal peptide cleavage product that is formed by proteolytic cleavage of a precursor protein or a mature protein, however, does not define how the peptide is made but, rather, defines where the amino acids are situated in protein (e.g., at the N- or C-terminus of an amyloid  $\beta$  protein that is proteolytically derived from APP precursor protein). The feature thus distinguishes the peptides N and C from other peptides that are not found at either the amino or carboxy termini of a naturally occurring internal cleavage product. Finally, upon reading the specification, it is clear that the claims are not limited to chimeric peptides formed by a particular process.

Thus, the specification sets forth at least two approaches for synthesizing the claimed chimeric peptides: "The chimeric peptides of the present invention can be made by synthetic chemical methods which are well known to the ordinarily skilled artisan." Specification at page 27, lines 11-13. "Alternatively, the longer linear chimeric peptides can be synthesized by well-known recombinant DNA techniques." Specification at page 27, lines 25-26. In short the concept of "product by process" plays no part in the analysis of the instant claims. To the extent the Examiner relied on the concept of "product by process" the Examiner has relied on a mistaken basis for rejecting the claims as anticipated by Perl.

The Examiner, moreover, need look no further than the instant specification for an illustration that the limitation that peptides N and C are 2-5 amino acids found at the N-terminus or C-terminus of an internal peptide cleavage product that is formed by proteolytic cleavage of a precursor protein or a mature protein is a limitation that differentiates the claimed chimeric peptides from other peptides, e.g., "such as the peptides produced in Perl." As set forth in the specification, amyloid  $\beta$  peptide is derived from proteolytic cleavage of amyloid precursor protein (APP). Specification at page 2, lines 4-8. "Naturally-occurring internal cleavage" of APP yields specific, amyloid  $\beta$  isoforms, for example, A $\beta$ 1-40, A $\beta$ 1-42, A $\beta$ 1-43, A $\beta$ 3-42, A $\beta$ 11-42 and A $\beta$ 17-42. Specification at page 19, lines 23-25. Thus, with reference to these isoforms of A $\beta$ , claim 1, for example, is directed to chimeric peptides of formula (I) or (II) where N is selected from among the twelve peptides that are 2-5 amino acids in length and start with the amino acids found respectively at positions 1, 11 and 17 of A $\beta$  and C is selected from among the twelve peptides that are 2-5 peptides in length and terminate with the amino acids at positions 40, 42 or 43 of A $\beta$ . Thus, with reference to the aforementioned isoforms, claim 1 calls for to a relatively small number of the possibilities of all of the possible peptides derived from A $\beta$  that are 2-5 amino acids in length. When properly construed, N and C are proper limitations that distinguish the claimed chimeric peptides from all other chimeric peptides.

In the absence of the improper "product by process" analysis, the Examiner provides no factual basis for asserting that the feature that N and C are peptides from the N-terminus or C-terminus of an internal peptide cleavage product that is formed by proteolytic cleavage of a precursor protein or a mature protein "does not place any patentable structure characteristic on the final product, i.e., the claimed chimeric peptide, which would differentiate the claimed peptides made by

another process, such as the peptides produced by Perl.” See Final Office Action at page 3, lines 1-5. The plain meaning of claim 1, e.g., with reference to Perl is that it would be limited to chimeric peptides comprising the first 2-5 amino acids of a naturally-occurring internal peptide cleavage product of human transaldolase that is formed by proteolytic cleavage of a transaldolase precursor or mature transaldolase. (And Perl discloses no such chimeric peptides.)

For the reasons set out in this section, the Examiner has failed to properly construe the pending claims and has misapplied Perl.

### **III. PERL DOES NOT ANTICIPATE THE PROPERLY CONSTRUED CLAIMS**

Anticipation requires that every limitation of a rejected claim be set forth explicitly or inherently in a single reference *Autofina v. Great Lakes Chemical Corp.*, 441 F.3d 991 (Fed. Cir. 2006). The proper test is whether “each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1570 (Fed. Cir. 1988). Each element must be “arranged as in the claim.” *Net Moneyin, Inc. v. Verisign, Inc.*, Fed. Cir. 2008, CV 2007-1565 at 15-16. Perl does not anticipate the pending claims because it fails to disclose each limitation of the properly construed claims.

As set forth above, the properly construed claims are directed to chimeric peptides of formula (I) or (II) wherein, in their broadest aspects, N consists of 2-5 amino acid residues from the free N-terminus of a naturally-occurring internal peptide cleavage product that is formed by proteolytic cleavage of a precursor protein or a mature protein and peptide C consists of 2-5 amino acid residues from the free C-terminus of a naturally-occurring internal peptide cleavage product that is formed by proteolytic cleavage of a precursor protein or a mature protein. Perl does not disclose any chimeric peptide that meets the properly construed definition for N and C. For at least this reason, Perl does not anticipate 1-5, 10 and 21-25.

Claims 2-5 and 21-25 are directed in particular to chimeric peptides calling for N to be amino acid residues from the free N-terminus of a naturally-occurring internal amyloid  $\beta$  peptide cleavage product that is formed by proteolytic cleavage of an amyloid precursor protein and C is limited amino acid residues from the free C-terminus of a naturally-occurring internal amyloid  $\beta$  peptide cleavage product that is formed by proteolytic cleavage of an amyloid precursor protein.

Perl does not disclose a chimeric protein comprising a peptide from the N- or C-terminus of a naturally-occurring internal amyloid  $\beta$  peptide cleavage product that is formed by proteolytic cleavage of an amyloid precursor protein. For this reason particularly, Perl does not anticipate claims 2-5 and 21-25.

Additionally, the claims call for "N" or "C" to be 2-5 amino acid residues (*see* claim 1), 2 or 3 residues (*see* claims 4 and 5) or 2-4 residues (*see* claim 21). Perl fails to disclose any chimeric peptide that meets the length features set out in the claims. For this reason additionally, Perl does not anticipate claims 1-5, 10 and 21-25.

#### **IV. CONCLUSION**

For at least the reasons set forth above, Perl does not anticipate claims 1-5, 10 and 21-25. The pending rejection of these claims under section 102 (e) that is based on Perl should be withdrawn.

Dated: October 29, 2008

Respectfully submitted,

By /Mitchell Bernstein/  
Mitchell Bernstein

Registration No.: 46,550  
DARBY & DARBY P.C.  
P.O. Box 770  
Church Street Station  
New York, New York 10008-0770  
(212) 527-7700  
(212) 527-7701 (Fax)  
Attorneys/Agents For Applicant